

Notice of Allowability

Application No.

09/633,882

Applicant(s)

THORUP ET AL.

Examiner

Benjamin R. Bruckart

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment response to non-compliant amendment filed 9/13/06.
2. ☒ The allowed claim(s) is/are 1-19, 21, 23-27 renumbered to claims 1-25.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |


SALEH NAJJAR
SUPERVISORY PATENT EXAMINER

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Independent claim 1 among other things teaches "a method for controlling traffic flow in a network, comprising: generating a set of control weights for a respective set of links of the network, from a given network load and a cost function, where the set, of control weights begins with a starting set of control weights and iteratively is modified based on the cost function, and the iterative modifying is carried out in accord with a best-neighbor approach that is other than a steepest descent algorithm; and controlling traffic flow in the network using the set of control weights in decisions relative to links of the network that are to be used for the transmission of packets" in a computer environment. The iteratively modified best-neighbor approach is further defined as not the steepest descent approach because it searches for local minimums in neighboring states that reflect the lowest cost and that is adapts to a minimum faster than a non-steepest descent approach. The best-neighbor approach can meander to other performance areas to find the champion minimum. The dependent claims further teach the best neighbor approach is applied using different mechanisms such as the anti-cycling technique, impatience technique, diversification process, limited-range diversification process and piece-wise linear cost function, rarified neighborhood search, and dynamic graph technique.

Similarly independent claim 13 teaches an apparatus that uses a weight device to generate weights, one for each link and control traffic flow based on the links. Claim 13 is also limited by the use of the best-neighbor approach that is other than a steepest descent algorithm that is defined by the specification and interpreted above. Claim 13 is also further defined by dependent claims that use anti-cycling techniques, impatience mechanism, diversification process, limited-

range diversification process, and piece-wise linear cost functions having two or more segments.

Similarly newly renumbered independent claims 20 and 24 teach among other things “a method for controlling traffic flow in a network having N interconnected links, where N is an integer, comprising: selecting a control weight for each of said N links by considering an N-dimensional concave cost function for traffic load on each of said N links that is relative to said weights, said selecting being adapted to accept a set of control weights that correspond to a point on said multidimensional cost function that is or approaches a local minimum, where said point is selected by means of a best-neighbor algorithm; and controlling traffic flow in the network using the set of weights. The best neighbor approach is further defined in the specification and the interpretation above and the point is selected by cycling through a local search technique and heuristic technique that moves a potential solution point to outside a neighborhood of the local search. Claim 21 is further defined where the cost function is piecewise linear, convex, and non-negative. Claim 23 is further defined where the heuristic is a limited-range diversification process. Applicant’s remarks are taken into consideration when “Dijkstra algorithm is not a best-neighbor approach” as claimed relying on the specification to further produce the evidence showing the differences.

The prior art does not teach the cited limitation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CORRESPONDANCE INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number 571-272-3982.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the examiner whose telephone number is 571-272-3982.

Benjamin R Bruckart
Examiner
Art Unit 2155
brb

3/19


SALEH NAJJAR
SUPERVISORY PATENT EXAMINER